REPORT ON HIGH WATER DISTRIBUTION

from

TWIN AND CEDAR CREEKS NEAR MT'PLEASANT

for

SEASON 1923

by

BRICE MCBRIDE

Water Commissioner Sevier River

and

LESLIE BOWEN

Hydrographer in charge of Field Work.

INTRODUCTION.

On April 26th, 1923, a meeting was held at Mt'Pleasant, between representatives of the Water Users on Twin and Cedar Creeks, and Brice Mc'Bride, representing the State Engineer.

This meeting was the result of a request from Mr. C. W. Sorensen, Secretary of the Cedar Creek High Water Company, to the State Engineer, to take over the distribution of water on these two creeks.

After hearing both sides of the controversy, Mr. Mc'Bride suggested that a hydrographer be employed during the high water season, to assist the local water master in his distribution.

To this the water users consented and pledged themselves to stand the expense of same, on a schedule of assessments based on their claims to water.

Mr. Leslie Bowen was appointed as hydrographer and started field work May 28th and continued to July 1st, or during the period of high water.

It was explained by Mr. Mc'Bride to the water users, and to Mr. Bowen, that his duties were to keep a daily record of the discharge of both creeks.

To assist the local water master in calibrating existing weirs and supervise installations of new ones.

To so distribute the waters of the two creeks that no crops would suffer for water as long as there was any available.

To use the Johnson Decree and the various applications for his guide in so distributing.

To gather such general information as would assist the State Engineer in re-determining water rights in the pending Adjudication

Suit on the Sevier River System.

It was expressly understood that it was not in Mr.Bowen's power to change any existing right, nor would any action on his part change the status of any claim.

FIELD WORK.

The accompanying tables contain the results of the hydrographic work which, together with the measurements made by Mr. Roy Christensen, with Mr. Bowen's help, constitute a very complete and accurage record of all water delivered during the period from May 28th - July 1st, on these creeks.

OBSERVATIONS BY MR. BOWEN

It was found that there were several rights not listed in either the Johnson Decree, nor in the various applications that were recognized by all users on the creeks, and are of equal priority with the decreed rights, and are at present drawing water in small continuous streams.

That the actual usage of the various claimants and the water they claim, does not correspond. This condition suggests the necessity of a re-determination of rights.

Generally speaking, the ditches in the old field were large enough to handle the demand for water, but clogs and jams were found frequently, showing carelessness in cleaning.

None of the higher ditches were large enough to carry the amounts of water claimed under them and in some cases were not large enough to carry amounts claimed to have been in them.

He reports that the maximum carrying capacity of the Cedar Creek High Water lateral is not greater than 14 second feet.

The maximum capacity of the A.H.Poulsen ditch is reported as 3.5 second feet.

The same condition applies to the weirs now installed. In practically every case they are too small to handle the water claimed and are not set deep enough below the bottom of the ditches to be safe from undermining and washing out.

It was recognized, that due to the shortness of the high water season and the necessity, due to this fact, of applying large quantities of water when available, that the duty of 1 second foot to 70 acres as decreed is too high during the high water season.

Due to the daily fluctuations of the stream the constant flow method of so many minutes to the share does not give an equitable distribution to users. To illustrate,- one man with twenty shares of water may receive a two second foot stream for 20 hours. But the next man on the same lateral may only receive one second foot, due to a drop in the creeks, for 20 hours or only one-half as much as his neighbor.

That the use of too small a stream is a waste of time and water on the bench lands, which are mostly planted to alfalfa.

RECOMMENDATIONS

1. That due to the fact that the various claimants for high water are in most cases, users and holders of decreed and primary rights, and due to the fact that both high and low water is co-mingled and taken down the same ditches, and due to the fact that no accurate measurements have been taken in the past, the exact status of some claims are questionable, some sort of an adjustment between rights is absolutely necessary.

This adjustment, however, is at present being brought about under the determination of all rights on the Sevier River System, by the

State Engineer and hence no action on the part of the water users is necessary at this time, excepting to cooperate with the State Engineer.

2. That larger and more accurate weirs be installed on the laterals and more accurage and complete measurements be kept each season in order to do away with guess work as to amounts of water claimed and actually used.

3. That the small continuous streams be combined into larger streams on a time basis in order to get more effective use of the water when available.

4. That delivery of water be made on an acre foot basis rather than on the present system, in order to eliminate the condition before mentioned, that causes some user to get more than his share.

5. That a careful check be kept on those users who do not take the best possible care of their water and that these offenders be meted out some sort of punishment, for example shutting off their water, in order to prevent a recurrence of the same offence.

CONCLUSION.

No water user who has made the proper use of his water, and is still doing so, need have any fear of losing his water right.

That beneficial use and priority is the basis of all water rights and all investigations being made by the State Engineer's Office, is to determine these facts.

Proper recognition and thanks is here given to Mr.Roy Christensen, the local water master, and all water users who assisted us in this work, and the hope is extended that much good will come of our investigations. The hope is also expressed that in the years to come, a qualified hydrographer be employed to assist in distributing the waters, in order to continue the improvements made this seaaon.

Very respectfully,

Brice McBride

Water Commissioner Sevier River.

DAILY DISCHARGE AT STATIONS MAINTAINED ON TWIN & CEDAR CREEKS BY STATE ENGINEER'S OFFICE MAY 28 - JULY 1, 1923,-
LESLIE BOWEN, HYDROGRAPHER.

Date	TWIN CREEK at Head	TWIN CREEK Less (a) Mt. Water (b)	TWIN CREEK Flow for Primary	CEDAR CREEK Sect. at Cabin (c)	CEDAR CREEK Spring City High Water 5ft. Weir	CEDAR CREEK Spring City High Water 2½ft. Weir	CEDAR CREEK Spring City High Water Total (d)
May 28.	35.75		35.75	8.37	5.85	7.67	21.89
" 29.	35.28		35.28	8.28	5.85	7.92	22.05
" 30.	29.00		29.00	6.50	6.00	7.00	19.50
" 31.	26.75		26.75	5.97	7.24	6.59	19.80
June 1.	25.36		25.36	6.55	6.13	4.61	17.29
" 2.	27.55		27.55	7.25	6.50	5.14	18.89
" 3.	29.00	1.59	27.41	8.00	7.44	5.03	20.47
" 4.	22.10	1.45	20.65	8.00	6.68	6.02	20.70
" 5.	32.50	1.98	30.52	8.00	7.44	5.91	21.35
" 6.	33.74	1.85	31.89	8.31	7.05	5.80	21.16
" 7.	35.00	3.14	31.86	15.00	9.40	7.25	31.65
" 8.	43.25	3.70	39.55	15.00	9.40	7.50	31.90
" 9.	44.50	4.07	40.43	17.00	13.19	8.00	38.19
" 10.	48.50	4.82	43.68	15.00	12.73	10.40	38.13
" 11.	50.00	5.74	44.26	16.75	17.60	10.92	45.27
" 12.	51.00	4.45	46.55	20.60	15.34	8.54	44.48
" 13.	51.00	4.45	46.55	11.75	15.83	10.24	37.82
" 14.	51.50	4.27	47.23	12.40	15.16	7.79	35.29
" 15.	51.25	3.34	47.91	11.50	10.72	6.83	29.05
" 16.	48.40	3.14	45.36	6.60	10.28	6.25	23.13
" 17.	47.25	2.12	45.13	4.45	10.07	5.80	20.32
" 18.	42.00	3.34	38.66	4.50	10.72	6.71	21.93
" 19.	42.00	2.12	39.88	4.00	9.86	6.25	20.11
" 20	41.00	2.12	38.88	4.00	9.23	6.02	19.25
" 21.	39.00	1.75	37.25	4.50	8.62	5.47	18.59
" 22.	39.00	1.75	37.25	5.25	8.62	5.47	19.34
" 23.	42.00	1.75	40.25	9.75	7.82	5.69	23.26
" 24.	34.00	3.70	30.30	10.80	8.82	6.71	26.33
" 25.	35.00	5.53	29.47	10.50	8.02	5.58	24.10
" 26.	34.50	6.13	28.37	7.60	8.82	6.13	22.55
" 27.	35.82	6.33	29.49	6.00	8.82	6.02	20.84
" 28.	36.00	5.94	30.06	5.60	8.22	5.25	19.07
" 29.	34.05	4.99	29.06	5.25	6.68	5.14	17.07
" 30.	28.02	4.86	23.16	5.45	6.68	4.01	16.14
July 1.	26.00	4.22	21.78	6.20	5.60	2.05	13.85
Total in Acre Feet	2628	207	2421	615	638	451	1704

(a) Station located on Twin Creek above where Sect. from Cedar Creek empties into Twin Creek.
(b) John K.Madsen ditch out of Twin Creek below station on Twin Creek.
(c) Station located on Sect. from Cedar Creek below the Jensen Tunnel Ditch
(d) Measured below Spring City Tunnel Ditch.

DAILY DISCHARGES OF TUNNEL DITCHES IN SEC. FT.

Date	Spring City	Jensen Ditch
June 1	1.62	1.92
2	2.35	2.20
3	2.39	2.37
4	1.86	2.46
5	2.39	----
6	2.63	2.53
7	2.75	2.88
8	2.75	5.40
9	3.22	3.76
10	3.34	4.45
11	3.34	4.97
12	3.82	9.56
13	3.34	4 .97
14	3.34	4.27
15	3.10	4.27
16	2.75	3.38
17	2.62	3.20
18	2.35	3.04
19	1.72	3.04
20	1.56	2.60
21	1.72	2.75
22	1.76	2.75
23	----	----
24	----	----
25	2.92	3.26

SEEPAGE DETERMINATION OF TWIN CREEK
June 21,1923

TIME A.M.			
	Twin Creek at Head	39.05 Sec.Ft.	
	Sect. from Cedar Creek	4.50 " "	
	Total for distribution	43.55 " "	
11:00	John K.Madsen Tunnel Ditch		1.75 Sec.Ft.
11:10	Coates Prior Ditch		1.73 " "
12:00	Poulson Ditch		.29 " "
	City East Ditch		.75 " "
	City West Ditch		.96 " "
	Raymond High Water Ditch		.89 " "
P.M.			
1:00	South Field Ditch		11.08 " "
	Brig.Lee Ditch		.10 " "
	Folk Ditch		1.08 " "
1:30	Cemetery Ditch		12.27 " "
			30.90 " "
	Less Tunnel Water		1.75 " "
	Total Twin Creek Distributed		29.15 " "
	At head Twin Creek (39.05 + 4.50 - 1.75) =		41.80 " "
	Total Twin Creek Distributed =		29.15 " "
	Loss		12.65 " "

$\frac{41.80 - 29.15}{41.80} \times 100 =$ 30.26% loss.

4 Miles.

N.B. John K.Madsen ditch was not considered in loss computation because it takes out immediately below entrance of Sect. from Cedar Creek.

SEEPAGE DETERMINATION SPRING CITY DITCH
June 22,1923

At head	6.82 Sec.Ft.
At gate 5 miles from head	6.10 " "
Loss	.72

$\frac{.72 \times 100}{6.82} =$ 10.5% loss in 5 miles.